

REMARKS/ARGUMENTS

1. Introduction

This is a full and timely response to the Office action of July 12, 2006. Paragraph [0038] as published is being slightly amended. Claims 1, 3, 4, 10, and 18 have been amended and reconsideration of claims 1-21 is respectfully requested.

2. Background

Claims 1-4, 7, 8, 10, 11, 13-15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kenjo (5,029,155). Claims 9, 16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenjo in view of Hsu et al. (US 2005/0025018). Claims 5-6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenjo in view of Suzuki (US 6,744,031). Claim 21 is rejected under 35 U.S.C. as being unpatentable over Kenjo in view of Suzuki and further in view of Hsu. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenjo in view of Ichimura (US 6,222,814) or Kenjo in view of Hsu and further in view of Suzuki and further in view of Ichimura. Claims 1-9 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenjo in view of Ichimura or Kenjo in view of Hsu and further in view of Suzuki and further in view of Ichimura.

3. Discussion

The present application effectively reduces required settling times in high-speed recordings by using a signal processor to obtain an average of two power levels in the photodiode output. The average power level as obtained by the signal processor is then held by a sample and hold circuit when the average has settled. Thus, 2 stages are involved, a signal processor to average the output of the photodiode, followed by a sample and hold circuit to sample and hold the average (paragraph [0029] as published, Fig.7). Both stages are necessary due to the short duration of the light pulses found in

high-speed recordings such as Blu-ray when utilizing an inexpensive photodiode.

To further eliminate the necessity of using an expensive photodiode having extremely quick response times, the present application selects specifically designed NRZI patterns during APC having a run length of according to the relative relationship between the recording speed and the bandwidth of the photodiode. As stated in paragraph [0031], a run length of the NRZI pattern is not constrained during APC, allowing a longer run length to compensate for a slower response, but cheaper photodiode. Thus selecting the NRZI pattern according to the relationship between recording speed and photodiode bandwidth, especially in conjunction with averaging the photodiode output prior to being sampled and held allows accurate laser power control using inexpensive equipment during high-speed recordings.

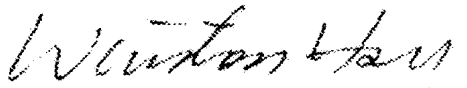
Although not disagreeing with the Examiner concerning Kenjo not inherently generating NRZI patterns, the applicant has chosen to amend claims 1, 10, and 18 to more fully claim the invention as described above. No new material has been introduced. Claims 1, 10, and 18 each comprise limitations concerning the present disclosure's feature of adjusting the NRZI pattern according to recording speed and photodiode bandwidth (paragraph [0031]). The applicant is unable to locate any teaching, suggestion of, or motivation for this feature in any of the known references.

Additionally, at least claims 1 and 18 clearly comprise the limitation of a sample and hold circuit sampling and holding an averaged signal averaged and output by a signal processor (paragraph [0029] as published, Fig.7). As the Examiner says concerning claim 2 on page 3 of the current Office action, Kenjo does teach "that the sample and hold circuit may be a low-pass filter" (Col.6, lines 35-40) and a sample and hold circuit in Fig.8. However, the applicant asserts that Kenjo does not disclose either specifically or inherently that a sample and hold circuit is coupled to a low-pass filter for

sampling and holding the average signal obtained by the low-pass filter. The Examiner's statement that "the S&H output is clearly held for a long period of time, so the S&H circuit must have a sample and hold circuit more sophisticated than a single low-pass filter" may be true, but does not necessarily require the use of the claimed structure to achieve which is required for inherency. All claim limitations must be specifically found in the prior art, and the applicant is unable to locate this particular teaching in the reference.

As Kenjo is utilized as the primary reference in all rejections and the applicant has demonstrated claim limitations not found or suggested in Kenjo or other known prior art alone or in combination, reconsideration of all claims in the application is respectfully requested.

Sincerely yours,



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Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan.)